

SD >

(Once Amended)

A
B A spark plug having a 360° sparking zone configuration to
reduce fouling and improve combustion efficiency, said spark plug,
comprising:

an outer annular electrode,

A1
an insulator disposed within said outer electrode and
having an axial extent, said outer electrode having an annular end
face which extends axially beyond said [insulating element]
insulator,

an inner electrode secured within said insulator, and

a disk-shaped element supported on [the] an end of said
inner electrode, said disk-shaped element being spaced from the end
face of said outer electrode by a gap "G" and defining with said
outer electrode a 360° annular sparking zone in which a spark can
pass between the two electrodes at any point in the 360° annular
sparking zone.

2 (Resubmitted)

The spark plug of claim 1, wherein said inner electrode
comprises a rod-shaped element supported substantially centrally
within said insulator.

3 (Resubmitted)

The spark plug of claim 2, wherein said rod-shaped
element is held within said insulator by a tight friction fit
whereby said gap "G" can be maintained.

4 (Resubmitted)

The spark plug of claim 3, wherein said gap "G" is adjustable.

5 (Resubmitted)

The spark plug of claim 4, wherein a preferred range of adjustment for said gap "G" is between 0.020 inch and 0.080 inch.

6 (Resubmitted)

The spark plug of claim 1, wherein the outer electrode includes an annular contact face comprising a hardened alloy material.

7 (Resubmitted)

The spark plug of claim 6, wherein said disk-shaped element comprises an annular lip at the periphery thereof, said lip extending in the direction of said contact face.

8 (Resubmitted)

The spark plug of claim 7, wherein said lip has a rectangular cross-section.

9 (Resubmitted)

The spark plug of claim 7, wherein said lip has a triangular cross-section.

10 (Resubmitted)

The spark plug of claim 1, wherein said disk-shaped element comprises a circular plate having substantially parallel opposing major surfaces.

11 (Resubmitted)

The spark plug of claim 10, wherein sparks in said sparking zone move from said outer electrode to said inner electrode.

12 (Resubmitted)

The spark plug of claim 11, wherein said sparks comprise one or more simultaneously generated sparks.

13 (New Claim)

A2
The spark plug of claim 1 wherein a spark in the spark zone moves axially with the inner electrode between the outer and inner electrodes.

14 (New Claim)

The spark plug of claim 1 wherein a spark in the spark zone moves in a 360° direction so that the points of ignition will continually change.

Sub 2

15 (New Claim)

An improvement in a spark plug, having an outer annular electrode and an insulator disposed within said outer electrode and having an axial extent, and where the outer electrode has an end which extends axially beyond said insulator, and an inner electrode secured within said insulator; wherein the improvement comprises a disk-shaped element supported on an end of said inner electrode, said disk-shaped element being spaced from the end of said outer electrode by a gap and defining with said outer electrode a 360° annular sparking zone in which a spark can pass between the two electrodes at any point in the 360° annular sparking zone.

17
18 (New Claim)

Ad

The improvement in the spark plug of claim 15 wherein said sparks comprise one or more simultaneously generated sparks.

Sub 3

17 (New Claim)

The improvement in the spark plug of claim 15 wherein a spark in the spark zone moves axially with the inner electrode between the outer and inner electrodes.

18 (New Claim)

The improvement in the spark plug of claim 15 wherein a spark in the spark zone moves in a 360° direction so that the points of ignition will continually change.

Sub > 19 (New Claim)

B3

A spark plug, comprising:
an outer annular electrode,
an insulator disposed within said outer electrode and having an axial extent, said outer electrode having an annular end face which extends axially beyond said insulator,
an inner electrode secured within said insulator, and
an extension element supported on the end of said inner electrode, said extension element being spaced from the end face of said outer electrode by a gap and defining with said outer electrode a 360° annular sparking zone in which a spark can pass between the two electrodes at any point in the 360° annular sparking zone.

Sub > 20 (New Claim)

C5

The spark plug of claim 19 wherein a spark in the spark zone moves in a 360° direction so that the points of ignition will continually change.